allogeneic hematopoietic stem cell transplantation (HSCT), in whom both agents were orally administered.

Patients and Methods: Eighteen recipients of allogeneic HSCT who had already been on a steady dose of oral calcineurin inhibitors (CsA (n = 8) or tacrolimus (n = 10)), and were started on oral voriconazole (200 mg per body every 12 h) for the treatment or prophylaxis of fungal infection could be evaluated. The concentration/dose (C/D; (ng/ml)/(mg/kg)) ratio of calcineurin inhibitors was calculated 7–10 days after initiating voriconazole when the increased blood levels of calcineurin inhibitors had stabilized. The plasma level of voriconazole was measure by high-performance liquid chromatography.

Results: The median C/D ratios of CsA and tacrolimus significantly increased after initiating voriconazole as compared with those before initiating voriconazole ($P < 0.05$). Median increases of C/D ratios after initiating voriconazole were 62.0% with a range of 0% to 135.8% in CsA-administered patients, and 196.8% with a range of -32.0% to 400.0% in tacrolimus-administered patients, which tended to be higher in tacrolimus-administered patients ($P = 0.068$). The plasma level of voriconazole measured 7–10 days after initiating voriconazole was 2.26 ± 1.21 mg/ml, and exceeded 2.0 mg/ml in 12 patients (66.7%). The increase in C/D ratio of CsA and tacrolimus after initiating voriconazole did not correlate with the plasma level of voriconazole.

Conclusion: Although calcineurin inhibitors and voriconazole demonstrates a significant interaction when both agents are administered orally, the magnitude of interaction differs widely among the patients, and is considered greater with tacrolimus than with CsA. Since the interindividual difference was not due to the difference in the bioavailability of oral voriconazole, other mechanisms should be explored.

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THE UPDATED SCHWARTZ FORMULA AS A SCREENING TEST FOR ABNORMAL KIDNEY FUNCTION PRIOR TO HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Assessing renal function is an integral part of evaluating pediatric patients for hematopoietic stem cell transplantation (HSCT). The most accurate method is DTPA-Tc-^{99m} GFR testing. It, however, is costly and time consuming. The Schwartz formula, which was recently updated, represents an easy alternative. To determine the appropriateness of using the updated and simplified Schwartz formula for pre-transplant screening for abnormal kidney function, we compared it to the results obtained using DTPA-Tc-^{99m} GFR testing, which we routinely perform as part of our pre-transplant evaluation. We retrospectively reviewed the charts of 107 consecutive children over the age of 12 months who underwent HSCT between January 1, 2004 and June 30, 2006, including demographic data, serum creatinine and DTPA-Tc-^{99m} GFR, height, and primary diagnosis. GFR was estimated using the updated Schwartz formula (0.413*height in centimeters/Creatinine). Nuclear medicine measurement of GFR was carried out using DTPA-Tc-^{99m} per institutional protocol, and calculated GFR was corrected for body surface area. The utility of using the calculated GFR as a screening test to distinguish patients with abnormal GFR (<90 ml/min/1.73 m^2) was tested by Receiver operating characteristic (ROC) curve analysis. Cut-off points optimizing sensitivity and simultaneously optimizing both sensitivity and specificity were determined. There were 56 males and 51 females. The mean age at transplantation was 9.1 years (+/-5.8). Eighty five (79.4%) patients had malignancies (table I). The mean estimates of GFR with DTPA-Tc-^{99m} and the updated formula were 106.62 (S.E, ±28.35) and 96.48 (S.E., ±26.10), respectively. The area under the curve for calculated GFR was 0.71 (P = 0.001). The GFR value optimizing both was 87.4 ml/min/1.73 m^2, with sensitivity 67.5% and specificity 64.4% (34% of patients misclassified). At a cut point of 109 ml/min/1.73 m^2, the sensitivity was 82.5%, however the specificity was compromised at only 30.2%. The updated Schwartz formula is a poor screening method for abnormal kidney function in HSCT candidates. Nuclear medicine testing maybe indicated, especially in heavily pretreated patients.

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PSYCHOSOCIAL FACTORS AS MEASURED BY THE TRANSPLANT EVALUATION RATING SCALE (TERS) PREDICT LENGTH OF HOSPITALIZATION AND INFECTIOUS COMPLICATIONS FOLLOWING HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Although psychological and social factors are recognized as being important in the evaluation of patients for hematopoietic stem cell transplantation (HSCT), no standard approach to psychosocial assessment currently exists. In solid organ transplantation, psychosocial assessments have been integrated into the selection of appropriate candidates, and certain psychosocial variables, such as active substance abuse, have been shown to negatively impact outcomes in solid organ transplant patients. To determine whether similar factors impact outcomes in patients undergoing HSCT, we prospectively conducted psychosocial assessments on 155 consecutive patients undergoing autologous HSCT primarily initiated in an outpatient setting. The relationship between psychosocial variables, such as those assessed on the Transplant Evaluation Rating Scale (TERS), and objective outcomes, such as length of hospitalization and the number of documented blood infections were evaluated. Based on the patient's TERS score, each patient was stratified into one of two groups (low/moderate risk (n = 134) vs. high risk (n = 21)) based on their predicted psychosocial risk for problems during transplant. Although the two groups were similar in regards to known pre-transplant prognostic factors such as age, performance status, disease risk, and transplant type, there continues to be a significant difference in the mean length of hospitalization between patients who score low/moderate (10 days) and those who scored high (16 days) on the TERS. Furthermore, there was also a significant difference (p<.0001) in the total number of blood infections per patient (48% of high risk patient had documented blood infections vs. 39% of low/moderate risk patients had documented blood infections) based on their TERS score. This data also revealed a significant difference in the total number of blood infections over all between groups (p<.0001). Although psychosocial factors appear to influence a patient's process during HSCT, it is not clear what particular psychosocial factor most impacts these objective outcomes. These findings suggest a strong correlation between pre-transplant psychosocial risk factors and patient experiences in HSCT.

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THE IMPACT OF DONOR TYPE AND ABO INCOMPATIBILITY ON TRANSFUSION REQUIREMENTS AFTER NONMYELOABLATIVE HEMATOPOIETIC CELL TRANSPLANTATION (HCT)

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We retrospectively analyzed transfusion requirements within the first 100 days among 503 allogeneic HCT recipients with hematological malignancies given nonmyeloablative conditioning. We compared transfusion needs among recipients given grafts 1)